REMARKS

The Office Action mailed May 20, 2005, has been received and reviewed. Claims 1 through 7 and claims 20 through 24 have been cancelled. Claims 8 through 19 are currently pending and under examination in the application. Claims 1 through 7, and 20 through 24 are withdrawn from consideration as being drawn to a non-elected invention, and have been canceled. Applicants herein acknowledge the restriction requirement in the above-referenced application, and affirm the election to prosecute the claims of Group III, claims 8 through 19, without further traverse. Claims 8 through 19 stand rejected. Applicants has amended claims 8 and 14, and respectfully request reconsideration of the application as amended herein.

Preliminary Amendment

Applicant's undersigned attorney notes the filing herein of a Preliminary Amendment on May 10, 2002, which filing was not acknowledged in the outstanding Office Action. Should the Preliminary Amendment have failed for some reason to have been entered in the Office file, Applicant's undersigned attorney will be happy to have a true copy thereof hand-delivered to the Examiner.

Claim Objections

Claim 14 is objected to due to informalities in the claim language. Appropriate correction has been made.

35 U.S.C. § 102(e) Anticipation Rejections

Anticipation Rejection Based on U.S. Publication No. 2002/0114394 A1 to Ma

Claims 8 through 10, 12 and 18 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ma (U.S. Publication No. 2002/0114394 A1). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor*

Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants submit that the Ma reference does not and cannot anticipate under 35 U.S.C. § 102 the presently claimed invention of presently amended independent claim 8, and claims 9, 10, 12, and 18 depending therefrom, because the Ma reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims.

The Office Action alleges:

> Ma, in Figures 2, 3, and 5, discloses the same method of motion searching a macroblock as specified in claims 8-10, 12, and 18 of the present invention, comprising determining a predicted motion vector MV; calculating a predicted search range r; selecting a starting location (0, 0) based on the predicted motion vector and the predicted search range; selecting a search pattern (Fig. 1) based on the predicted motion vector; and diamond motion searching the macroblock (Figs. 2-3) from the selected starting location based on the selected search pattern to determine a best motion vector." (Office Action, pp. 4-5).

Applicants respectfully disagree that the Ma reference anticipates Applicants' invention as claimed in presently amended independent claim 8 which reads:

> 8.   A method of motion searching a macroblock, comprising:
> determining a predicted motion vector;
> calculating a predicted search range;
> *selecting a starting location based on said predicted motion vector and said predicted*
>   *search range, said predicted search range defining a maximum distance that a*
>   *current macroblock could have moved away from said predicted motion vector*;
> *selecting a search pattern based on said predicted motion vector*; and
> diamond motion searching said macroblock from said selected starting location based on
>   said selected search pattern to determine a best motion vector. (Emphasis added.)

In contrast, the Ma reference discloses:

> For each block's motion vector generation, MAP (or ARP, if used) will be used
>   only once at the initial search stage to identify where is the most promising
>   position to begin the local search from that position. *Once the position is*
>   *found, only [small diamond search pattern] SDSP will be used*
>   *throughout the remaining search process until the motion vector is*
>   *found.* (Paragraph [0038]; emphasis added).
> MAP is composed of several intelligently chosen search positions, which could be
>   formed based on the positions from the origin (0, 0) of the current
>   macroblock (or block, in a more general term and shall be interchangeably

used, thereafter), . . . [h]ence, MAP has a dynamic or irregular shape established from each macorblock. ARP, which can be viewed as a less irregular MAP, . . . has a rood shape with four arms constantly maintained at the directions in east, west, south and north, respectively. The length of rood-arm, F, is adaptively computed for each block initially, and the *r is equal to the maximum of the city-block distance of the median-predicted motion vector*, based on the ROS chosen. (Paragraph [0038]; emphasis added).

Clearly, the Ma reference does not disclose "selecting a starting location based on said predicted motion vector and said predicted search range, said predicted search range defining a maximum distance that a current macroblock could have moved away from said predicted motion vector; [and] selecting a search pattern based on said predicted motion vector" as claimed by Applicants in presently amended independent claim 8. Specifically and contrary to the disclosure of the Ma reference, Applicants' invention as presently claimed recites selecting a starting location based on two separate inputs, namely the predicted motion vector and the predicted search range. Additionally, Applicants' invention as presently claimed further recites selecting a search pattern base on the predicted motion vector which is in direct contradiction to the Ma references' disclosure of "once the position is found, only [small diamond search pattern] SDSP will be used throughout the remaining search process until the motion vector is found."

Therefore, presently amended independent claim 8, and claims 9, 10, 12, and 18 depending therefrom, are not anticipate by the Ma reference under 35 U.S.C. § 102. Accordingly, such claims are allowable over the cited prior art and Applicants respectfully request that such rejections be withdrawn.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Publication No. 2002/0114394 A1 to Ma in view of MPEG-4 Diamond Search Specification

Claims 11, 13 through 17 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ma (U.S. Publication No. 2002/0114394 A1) in view of MPEG-4 Diamond Search Specification. Applicant respectfully traverses this rejection, as hereinafter set forth.

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M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of claims 11, 13 through 17, and 19 are improper because the elements for a prima facie case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Regarding claims 11, 13 through 17, and 19, which at least indirectly depend from presently amended independent claim 8, Applicants sustain the above-proffered arguments that Ma does not teach, disclose or motivate Applicants' invention as claimed in presently amended independent claim 8.

The Office Action introduces the MPEG-4 Diamond Search Specification and alleges:

> Although Ma discloses substantially the same motion searching method, it is noted Ma differs from the present invention in that it fails to particularly quantify any numerical values as specified in claims 11, 13-17, and 19. The MPEG-4 Specification, however, teaches the concept of such well known standards wherein maximum difference SAD, threshold T, or any radius r, etc. maybe arbitrarily set according to the user's requirement. (Office Action, p. 6).

Even assuming arguendo, that the MPEG-4 Diamond Search Specification reference teaches numerical values, neither the Ma reference nor the MPEG-4 Diamond Search Specification teach, suggest or motivate Applicants' invention as claimed, namely:

> 8.   A method of motion searching a macroblock, comprising:
> determining a predicted motion vector;
> calculating a predicted search range;
> *selecting a starting location based on said predicted motion vector and said predicted search range, said predicted search range defining a maximum distance that a current macroblock could have moved away from said predicted motion vector;*
> *selecting a search pattern based on said predicted motion vector;* and
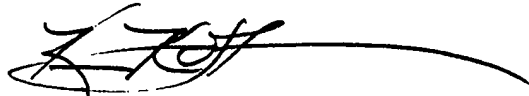
diamond motion searching said macroblock from said selected starting location based on said selected search pattern to determine a best motion vector. (Emphasis added.)

Therefore, Applicants respectfully request that the rejections of dependent claims 11, 13 through 17, and 19 be withdrawn.

CONCLUSION

Claims 8 through 19 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,

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